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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,537	10/10/2003	Masahiro Yasukawa	040084.01	9734

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EXAMINER

PIZIALI, JEFFREY J

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/682,537

Applicant(s)

YASUKAWA, MASAHIRO

Examiner

Jeff Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/091,544.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/10/03 &amp; 4/19/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/091,544, filed on 1 July 1998.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Although the instant specification states, "the anti-reflection film has substantially the same shape as that of the pixel electrode and is provided below the pixel electrode" (see Page 3, Paragraph 17, Sentence 1); the anti-reflection film [18] illustrated in Figures 4(a)-4(c) is noticeably thinner than the pixel electrode [14]. In light of the aforementioned figures, it would be unclear to one skilled in the art what is meant by "substantially the same shape," and whether the specification is enabling of such a feature.

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4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 9 recites the limitations "said contact hold" and "the plane of said pixel electrode" in lines 1-2. There is insufficient antecedent basis for either limitation in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Shintani et al. (US 5,978,056 A).

Regarding claim 1, Shintani et al. discloses a substrate [Fig. 4, 1] having a pixel electrode [Fig. 4, 8a], comprising: a substrate [Fig. 4, 1]; a plurality of pixel units [Fig. 2; 130], each pixel unit including a pixel electrode [Fig. 4, 8a] useable as a reflective electrode and a switching element [Fig. 4, 2] electrically connected to said pixel electrode, said pixel units being arranged in a matrix pattern on the substrate (see Fig. 2), the switching element having a terminal

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electrode [Fig. 4, 7] forming a conductive layer, connecting wiring [Fig. 4, 9a] provided between the pixel electrode and the conductive layer that electrically connects said pixel electrode and said terminal electrode; a light-shielding layer [Fig. 4, 51] having an opening surrounding a portion in which said connecting wiring is formed and having no opening in regions between adjacent pixel electrodes, said light-shielding layer being formed between said pixel electrode and said conductive layer; and an underlying insulating layer [Fig. 4, 4b] being formed below the pixel electrodes [Fig. 4, 8a] (see Column 6, Line 30 - Column 7, Line 53), and in regions between adjacent pixel electrodes of the plurality of pixel units, a groove [Figs. 4 and 13; v-shaped portion of 8b] having substantial V-shaped surface relative to an upper surface of the underlying insulating layer being formed in regions between pixel electrodes [Fig. 13, 8a] on a surface of the underlying insulating layer [Fig. 13, 46] or on a surface of said light-shielding layer [Fig. 13, 51] under said underlying insulating layer for reflecting obliquely the light vertically incident [Fig. 13, 42] which enters a space between the pixel electrodes (see Column 9, Line 64 - Column 10, Line 27).

Regarding claim 2, Shintani et al. discloses an anti-reflection film [Fig. 4, 52] is provided between the pixel electrode and the light-shielding layer (see Column 6, Lines 38-48).

Regarding claims 3, Shintani et al. discloses the anti-reflection film has substantially the same shape as that of the pixel electrode, and being provided below the pixel electrode (see Figure 4; Column 6, Lines 38-48).

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Regarding claims 4, Shintani et al. discloses the anti-reflection film including titanium nitride (see Column 6, Line 43).

Regarding claims 5, Shintani et al. discloses a titanium nitride thickness of 500 to 1000 angstroms (see Column 8, Lines 13-14).

Regarding claim 6, this claim is rejected by the reasoning applied in rejecting claim 3.

Regarding claim 7, this claim is rejected by the reasoning applied in rejecting claim 4.

Regarding claim 8, this claim is rejected by the reasoning applied in rejecting claim 5.

Regarding claim 9, Shintani et al. discloses a contact hole [Fig. 4; at 8b] is provided at a substantially central position of a plane of the pixel electrode (see Column 6, Lines 49-59).

Regarding claim 10, this claim is rejected by the reasoning applied in rejecting claim 1; furthermore, Shintani et al. discloses the groove is defined by a pair of sloping surfaces, wherein the pair of sloping surfaces of the groove are opposed to each other (see Figs. 4 and 13).

Regarding claim 11, this claim is rejected by the reasoning applied in rejecting claims 1 and 10; furthermore, Shintani et al. discloses the groove having no flat surface on bottom (see Figs. 4 and 13 -- wherein the illustrations are upside down).

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zhang et al. (US 6,087,648 A), Fukumoto (US 5,933,204 A), Matsushima (US 5,917,563 A), Kanbe et al. (US 5,500,750 A), Yamamoto et al. (US 5,426,526 A), Matsuo et al. (US 5,414,547 A), Hastings et al. (US 5,365,355 A), Wakai et al. (US 5,327,001 A), Shannon (US 5,130,829 A), and Yanagisawa (US 4,759,610 A) are cited to further evidence the state of the art pertaining to pixel electrode substrates.

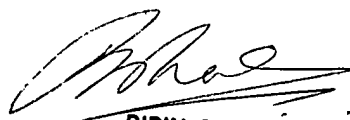
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



6 December 2005



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